

## Survey on Research Activities and Attitudes of Postdoctoral Fellows

### [Press Release]

In order to clarify the actual condition of the research environment, etc. for postdoctoral fellows, the National Institute of Science and Technology Policy (NISTEP) conducted a web survey of approximately 1,000 postdoctoral fellows from November 2007 to January 2008 and compiled the results of the survey in connection with research activities and lifestyles. The results revealed that the average term-lengths of employment of postdoctoral fellows is 2.7 years and their average monthly income is about ¥306,000; the majority of respondents were satisfied with their research activities, and approximately half were satisfied with their conditions of employment.

In this survey, 10% of the postdoctoral fellows affiliated with universities, public research institutes, etc. in Japan were sampled in proportion to the ratios of gender and research fields. They replied to a questionnaire posted on the website. The number of valid respondents was 1,035 persons, for a valid reply rate of 66%. The following facts were clarified as a result of this survey.

- ① The average term-lengths of employment of postdoctoral fellows, etc. is 2.7 years.
- ② The average monthly income of postdoctoral fellows in Japan is estimated at about ¥306,000, including tax.
- ③ The work content of postdoctoral fellows is “Mainly own research,” 70%, “Research or educational job other than own research,” 17%, and “Other job (chore),” 13%.
- ④ Regarding independence in research, more than 50% of postdoctoral fellows reply that they make at least some decisions in “Writing of papers,” while approximately 20% replied that they have the authority to “Terminate projects.”
- ⑤ The average annual research achievement of postdoctoral fellows includes 1.6 reviewed papers, 0.3 bulletin papers, and 3.4 presentations at conferences.
- ⑥ Satisfaction
  - The majority of postdoctoral fellows were satisfied with their research activities, and approximately half of the respondents were satisfied with their employment conditions.
  - The satisfaction rating of postdoctoral fellows with the fellowship-type support, such as Research Fellows of the Japan Society for the Promotion of Science (JSPS), was high.
  - The longer postdoctoral periods tend to be lower satisfaction regarding “Selecting postdoctoral position as career path” and “Life in general.”

## [Outline of the Survey Results]

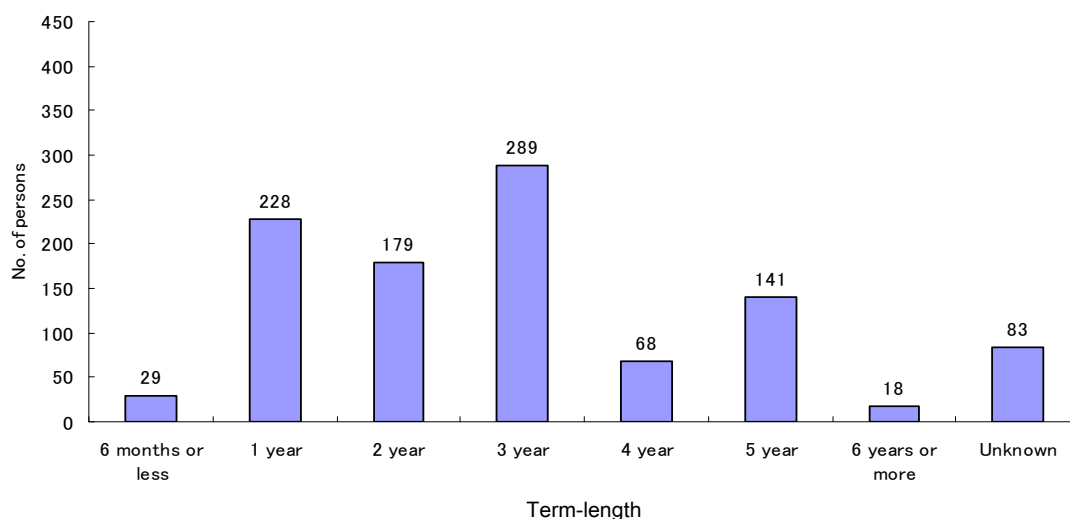
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### 1. Condition of Employment

In order to clarify the condition of employment of postdoctoral fellows, term-length, salary, etc. were investigated.

- The average term-length of postdoctoral fellows was 2.7 years.

Figure 1. Term-length of postdoctoral fellows



- The average monthly salary of postdoctoral fellows was approximately ¥306,000, including tax. The average for males was about ¥314,000, and that for females was about ¥282,000.
- Depending on the research field, average salaries differed by more than ¥100,000. The average monthly salary was highest in the field of Engineering (about ¥330,000), and lowest in Humanities and Social Sciences (about ¥213,000).

Table 1. Average monthly salaries of postdoctoral fellows (estimated values)

		(Unit: 1000 yen)
Item		Average
	Total (1035 persons)	306
Gender	Male (780)	314
	Female (255)	282
Research field	Humanities and Social Sciences (121)	213
	Science (397)	329
	Engineering (223)	330
	Agriculture (126)	287
	Healthcare (153)	307
	Others (15)	260

## 2. Research Activities

In order to clarify the research activities of postdoctoral fellows, the survey investigated the research environment, as characterized by exclusive-use desks and personal computers, internet access right, the work content of postdoctoral fellows, their independence in research, and other features.

- Exclusive desks were provided to 96% of the respondents; exclusive personal computers were provided to 64%.
- By source of funding, the research environments were not well prepared for persons who did not have an employment relationship with the institution with which they were affiliated.

Table 2. Research environment of postdoctoral fellows (ratio of persons for whom items were provided)

Source of funding	Exclusive desk	Exclusive personal computer	Personal identification issued by institution	Internet access right	Email address	Qualification to use library
Total (1035 persons)	95.9%	64.3%	82.3%	97.8%	95.5%	93.7%
21 <sup>st</sup> Century COE (112)	99.1%	50.0%	85.7%	98.2%	95.5%	99.1%
JSPS* Grant-in-Aid for Scientific Research (135)	98.5%	57.0%	85.2%	97.8%	92.6%	92.6%
JSPS* Research Fellow (87)	90.8%	40.2%	64.4%	95.4%	90.8%	87.4%
No employment relationship (27)	44.4%	14.8%	70.4%	85.2%	70.4%	77.8%
Subsidies, etc. (232)	97.4%	73.3%	86.2%	98.7%	97.8%	94.8%

\*JSPS: Japan Society for the Promotion of Science

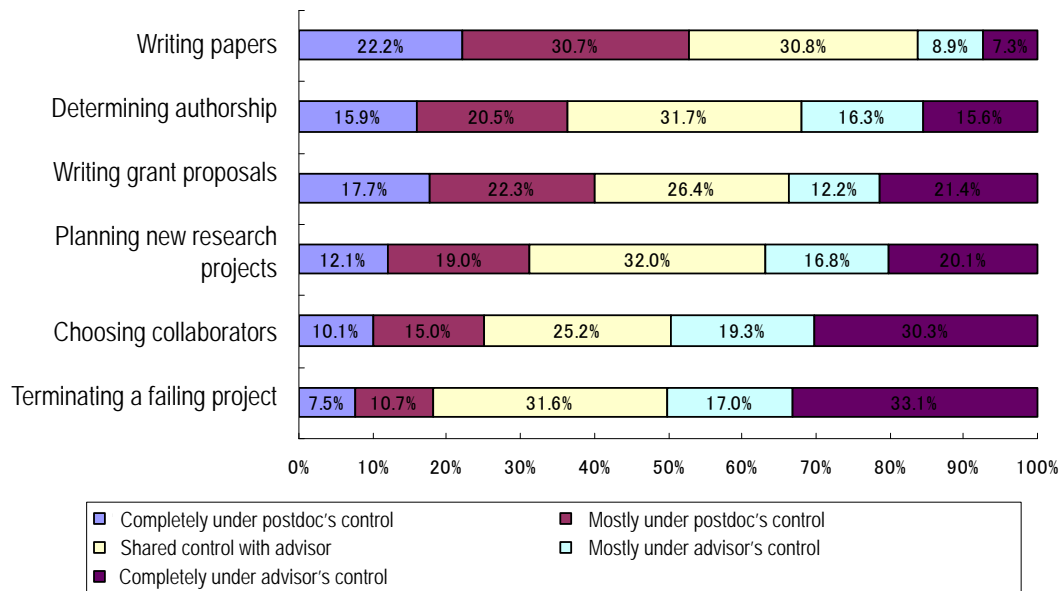
- On average, the work content of postdoctoral fellows was “Mainly own research,” 70%, “Research or educational work other than own research,” 17%, and “Other work (miscellaneous work),” 13%.

Figure 2. Work content of postdoctoral fellows

Mainly own research work 70%	Other research or educational activities 17%	Other (miscellaneous work) 13%
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- More than 50% of postdoctoral fellows replied that they made at least some decisions in “Writing of papers,” whereas approximately 20% replied that they had the authority to “Terminate project with problems.”

Figure 3. Control of research project



### 3. Research Achievement

In order to grasp the research achievement of postdoctoral fellows, the survey investigated the number of reviewed papers and similar items.

- As estimated annual research achievement of postdoctoral fellows, the average number of reviewed papers was 1.6, the average number of bulletin papers was 0.3, and the average number of presentations at conferences was 3.4.
- The number of reviewed papers was largest in the Engineering field.

Table 3. Research achievement of postdoctoral fellows (estimated per year)

Item		Reviewed papers	First author of reviewed paper	Bulletin papers	Conference presentations
Total (1035 persons)		1.60	0.74	0.34	3.37
Research field	Humanities and Social Sciences (121)	0.87	0.73	0.61	1.94
	Science (397)	1.57	0.69	0.34	3.07
	Engineering (223)	2.45	1.08	0.35	5.14
	Agriculture (126)	1.39	0.64	0.28	3.30
	Healthcare (153)	1.25	0.48	0.14	2.81
	Other (15)	1.21	0.70	0.32	2.72

- The number of reviewed papers was large for persons with overseas research experience.

Table 4. Research achievement of postdoctoral fellows in terms of mobility (estimated per year)

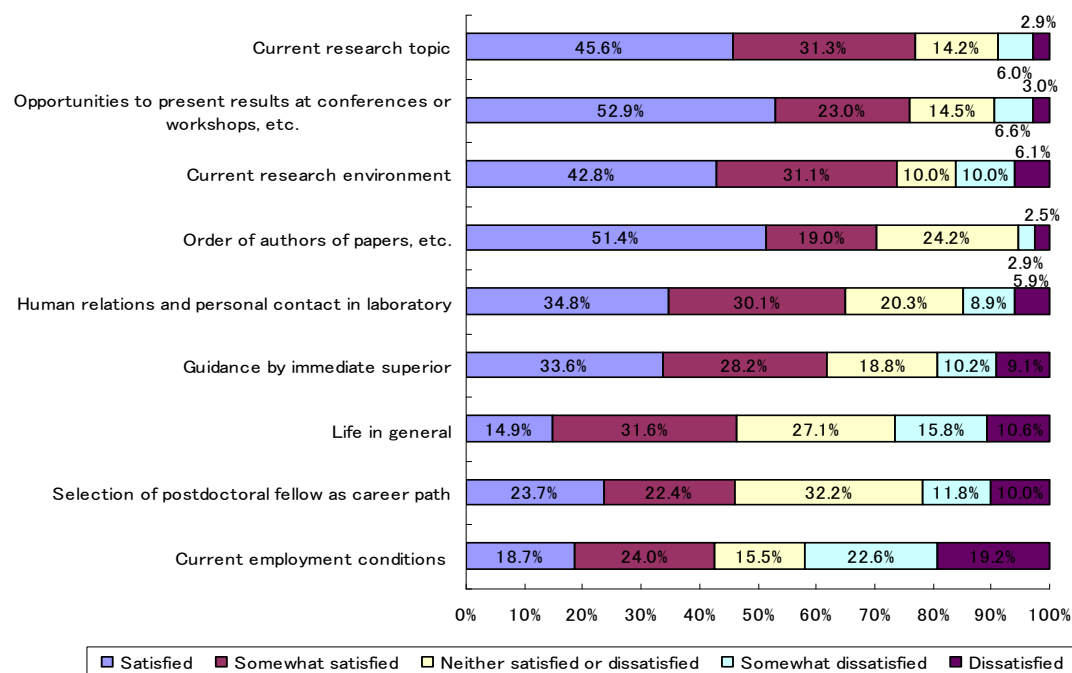
Item		Reviewed papers	First author of reviewed paper
Total (1035 persons)		1.60	0.74
Institution where postdoctoral fellow received doctorate	Same institution (349)	1.59	0.79
	Other institution in Japan (658)	1.52	0.67
	Other overseas institution (28)	3.82	1.81
Postdoctoral experience at other institution	No experience at other institution (675)	1.42	0.70
	Other institution in Japan (263)	1.56	0.68
	Other overseas institution (49)	4.02	1.34
	Experience both in Japan and overseas (48)	1.98	1.07

#### 4. Satisfaction with Research and Life

Postdoctoral fellows were asked about their satisfaction with their current research topics and research environment, selecting postdoctoral fellow as a career path, their satisfaction with life in general, etc.

- The majority of respondents were satisfied with their research activities as postdoctoral fellows. However, fewer than half of the respondents were satisfied with their lives in general, their selection of postdoctoral fellow as a career path, and their current employment conditions.

Figure 4. Satisfaction of postdoctoral fellows with research and life



- Persons in the field of Engineering expressed high satisfaction with “Current conditions of employment,” “Human relations and personal contact in the laboratory,” and “Life in general,” and persons in the Humanities and Social Sciences showed high satisfaction with “Selecting postdoctoral fellow” as a careerpath. On the other hand, persons in the Humanities and Social Sciences showed low satisfaction with “Current research environment,” persons in Healthcare expressed low satisfaction with “Current employment conditions,” “Order of authors’ names in papers, etc.,” and “Life in general,” and persons in Agriculture expressed low satisfaction with “Selecting postdoctoral fellow” as a careerpath.
- The satisfaction rating of fellowship-type postdoctoral fellows, etc., such as Research Fellows of the Japan Society for the Promotion of Science (JSPS), was high.

Table 5. Satisfaction of postdoctoral fellows with research and life by attribute

Item		Current research topic	Current research environment	Current employment conditions	Human relations and personal contact in laboratory	Order of authors of papers, etc.	Selecting postdoctoral fellow	Life in general
Total (1035 persons)		76.9%	73.9%	42.7%	64.9%	70.4%	46.1%	46.5%
Gender	Male (780)	76.5%	74.2%	41.7%	64.4%	72.2%	46.0%	44.9%
	Female (255)	78.0%	72.9%	45.9%	66.7%	65.1%	46.3%	51.4%
Research field	Humanities and Social Sciences (121)	81.8%	65.3%	42.1%	69.4%	69.4%	55.4%	48.8%
	Science (397)	78.1%	77.8%	41.1%	61.5%	71.8%	46.3%	47.1%
	Engineering (223)	74.4%	74.0%	52.0%	71.3%	73.5%	47.1%	50.2%
	Agriculture (126)	77.0%	73.0%	42.1%	65.1%	72.2%	34.9%	40.5%
	Healthcare (153)	75.8%	73.9%	35.3%	61.4%	64.7%	47.7%	44.4%
	Other (15)	53.3%	46.7%	33.3%	60.0%	40.0%	26.7%	26.7%
Main source of funding	21 <sup>st</sup> Century COE (112)	72.3%	70.5%	42.0%	63.4%	68.8%	48.2%	43.8%
	JSPS Research Fellow (87)	85.1%	77.0%	40.2%	62.1%	80.5%	65.5%	69.0%
	Other fellowship (19)	94.7%	84.2%	42.1%	84.2%	68.4%	68.4%	68.4%
	No employment relationship (27)	70.4%	29.6%	0.0%	44.4%	51.9%	25.9%	3.7%
	Operating subsidy, etc. (232)	77.6%	75.0%	48.3%	66.4%	75.0%	42.7%	48.7%

\* Figures indicate the total ratio of respondents who replied “Satisfied” or “Somewhat satisfied.”

- Satisfaction with research showed little relationship with years of experience as a postdoctoral fellow. On the other hand, satisfaction with “Selecting postdoctoral fellow” as a career path and “Life in general” showed a tendency to decrease in persons who had been postdoctoral fellows for longer periods.

Table 4. Relationship of length of experience as postdoctoral fellow and satisfaction rating

